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ABSTRACT

Self-regulation is a major developmental accomplishment that begins in infancy and continues throughout childhood. This study focused on early socialization of self-regulation, and examined whether there was a common core of self-regulation in young children cutting across contexts and age, and whether the same maternal behaviors operate similarly to support the growth of self-regulation across different aspects of self-regulation and over age. Participating in the study were 96 children assessed at 15, 24, and 36 months of age in several laboratory situations, including structured and unstructured interactions with their mothers. Various aspects of mothers' and children's behavior corresponding to different aspects of emerging self-regulation were coded, emotion regulation at 15 months, resistance to temptation at 24 months, persistence and mastery behavior at 36 months. The findings indicated that there were no relations among 15-month behavioral and affective responses to frustration, 24-month resistance to temptation latency or strategies, and 36-month persistence and affective responses to difficult tasks, suggesting little coherence in specific features of self-regulation during the toddler years. However, there were several correspondences in maternal behavior over tasks and ages, suggesting some continuity in mothers' socializing strategies relevant to self-regulation across several interaction contexts and ages. Using a general Self-Regulation score for children and four general parenting dimension scores for mothers (Controlling/High Structure, Negative/Intrusive, Supportive Structure/Gentle Guidance, and Warm/Positive), no relations were found across ages and settings in children's propensity to self-regulate. The overall self-regulation score was related to the affective, but not the controlling, structuring, and guiding, features of parenting. (KB)

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ED 424 902

SOCIALIZATION OF SELF-REGULATION: CONTINUITY AND DISCONTINUITY OVER AGE AND CONTEXT

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Self-regulation is widely recognized as a major developmental accomplishment that begins in infancy and continues throughout childhood (Kopp, 1982; Maccoby; Mischel). Recently, researchers have become interested in the origins of individual differences in early self-regulation, looking for sources both within the child (Fox, Rothbart, others) and within the parenting environment (Crockenberg, Kochanska, Kopp, Maccoby, others). In this presentation we focus on the early socialization of self-regulation. We do recognize that child factors like gender and temperament, as well as developmental maturity, moderate the socialization processes, but for today we will concentrate on maternal behavior.

My students and I **[SLIDE 1: TITLE AND AUTHOR NAMES]** have been studying various forms of self-regulation and mother-child interaction in toddlers cross-sectionally for a few years now, but our data have actually come from a longitudinal sample. So today our goal is to use the longitudinal data to address a couple of key questions about early self-regulation. **[SLIDE 2: QUESTIONS]**

One question is how general or specific self-regulation is: can we find a "common core" of self-regulation in young children that cuts across contexts and age? The second question is how general or specific socialization influences are: do the same maternal behaviors operate similarly to support the growth of self-regulation across different aspects of self-regulation and over age?

(I should note one caveat at the outset: we did not design this work to address these particular kinds of questions, so our answers today must be preliminary and only suggestive.)

We started by noting that self-regulation encompasses many different constructs, and many different kinds of behaviors. For example, Kopp (1982) and Maccoby (1983) identify several components of self-regulation, including: compliance, impulse control, delay of gratification, resistance to temptation, and modulation of emotions. **[SLIDE 3: Kopp/Maccoby DEFS OF SR]** So self-regulation requires the child to regulate behavior, attention, arousal, and emotion expression.

At the same time, these authors, as well as others (e.g., Kochanska) have noted that at its most general level, self-regulation requires the child to inhibit disapproved behavior and engage in socially-approved behavior, usually in the face of conflicting immediate personal goals. One common denominator across these different components of self-regulation, then, is the ability to monitor and modulate behavior according to adults' requests and expectations.

An important question that follows from these conceptualizations is just how general or specific self-regulation is. That is, does the young child who has the skills in place to comply with

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[1]Paper presented at SRCD, 1997, Washington, D.C.

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prohibitions and requests also use those skills to resist temptation, modulate emotions during frustration, and so on. To be concrete, would we expect that two-year-olds who are good at not touching the knobs on the stereo, also are better at not getting into trouble or being demanding when mom is on the phone, better at waiting for snack, more compliant with maternal requests to pick up their toys, less likely to fall apart in frustration when their block tower repeatedly falls over or their favorite toy is stuck under the couch, and more persistent on a challenging puzzle or shape-sorter?

On the one hand, we might expect commonalities because resisting temptation, delaying gratification, controlling impulses and affect expression all include compliance. Likewise, impulse control includes resisting temptation and delaying gratification, and vice versa. And so on. In other words, the various components of self-regulation intersect in multiple ways. Indeed, some authors have included these multiple aspects of self-regulation within a larger, overarching construct such as "conscience" (Kochanska), or "internalization".

On the other hand, however, each aspect of self-regulation engages different developing systems--attentional, motor, affective, social-communicative, social-cognitive systems are all involved. These systems develop in different ways and at different rates (e.g, Rothbart). Furthermore, the demands of the social environment are likely to differ across systems. For example, we know from Kopp's work with Gralinski that young children are expected to control some kinds of behavior and emotion before others. Hence, there may be little overlap at a given age in the child's various abilities to self-regulate. One possibility, though, is that by taking a developmental perspective on this question, we might find correspondences across ages in age-relevant aspects of self-regulation.

Related to this question about the coherence of early forms of self regulation within the individual child, and to some extent motivated by it, is our second question---whether the socialization antecedents of individual differences in early self-regulation lie in general features of parenting such as degree of control, warmth, or engagement; or whether we need to look for specific socialization of specific self-regulation skills. That is, do the same parental behaviors figure in the socialization of frustration tolerance and other aspects of arousal regulation, as are important in socializing resistance to temptation and delay of gratification, or in socializing impulse control and compliance?

Perhaps, e.g, the sensitive, warm, responsive parent provides the basic context in which the child generally moves from external to internal regulation across these multiple domains of self regulation. Or, perhaps, each aspect of self-regulation requires unique socialization inputs.

In our own conceptual organization of the socialization inputs to self-regulation we have suggested that self-regulation has both general and specific components, and correspondingly, that parenting influences will also be both general and specific.

Briefly, we distinguish between the MOTIVE to self-regulate, and specific SKILLS and STRATEGIES involved in the process of self-regulation. **[SLIDE 4: SR--> MOTIVES VS. SKILLS]** The implication is that a child may want to be compliant, to resist temptation, to regulate affect in peer interactions, and so on, but may not have the requisite skills to do so (and vice versa--may possess skills of distraction or avoidance, but be unwilling to put those to work when the

context demands self-regulation).

The corresponding implication is that these two complementary aspects of self-regulation have their roots in different aspects of socialization **[SLIDE 5: PARENTING-->SR]** . The motive to self-regulate, we hypothesize, is affected by the style of parenting and the quality of the child's relationship with parents; here, factors such as warmth, responsiveness, intrusiveness and rejection affect the child's willingness to go along with the parent's demands and expectations for the child to self-regulate. (This is similar to arguments made by a number of authors that shared positive affect and reciprocity in the parent-child relationship make the child open to socialization).

On the other hand, the particular strategies and skills that the child has available to self-regulate, we suggest, are a product of parental scaffolding, modeling, shaping, or teaching of specific strategies, often linked to specific situations. For example, some parents will encourage a toddler to distract herself from a frustrating situation, while other parents will insist that the child contain her frustration and keep trying.

In our recent empirical work, we have found support for the hypothesis that specific aspects of maternal behavior do relate to specific self-regulation skills in their young children. We have reported relations between mothers' strategies when their 15-month-olds are frustrated, and the children's own strategies for regulating their emotion and behavior in response to frustration. We have also reported relations between mothers' structuring of their 15-month-olds' behavior during play and their children's later strategies for structuring their own behavior during a resistance to temptation task at 24 months. And we have reported relations between mothers' evaluative feedback when they teach their 24-month-olds a difficult puzzle, and the children's later emotions and persistence in challenging, achievement-like tasks at 36 months.

Because the subjects in all 3 of these studies are participants in a longitudinal study, and because we have assessed them in multiple contexts at multiple ages, we are in a unique position to address the two questions I laid out earlier.

The sample consists of 96 children assessed at 15, 24, and 36 months in several laboratory situations, including structured and unstructured interaction with mother. At each age, and for each task, we coded different aspects of mothers' and children's behavior corresponding to different aspects of emerging self-regulatory competence (emotion regulation at 15 months; resistance to temptation at 24 months; persistence and mastery behavior at 36 months). **[SLIDE 6: Mother, child coding]**

CHILD:

15 mos: affect and regulation strategies in frustration task
24 mos: resistance to temptation, latency and strategies
36 mos: affect and persistence in difficult tasks

MOTHER:

15 mos, frustration task: response to child's affect, and behavioral attempts to help child regulate
15 mos, mother-child interaction with tea party playset: amount and quality of

of structure provided to maintain focused play
24 mos, teaching difficult task: evaluative feedback, directiveness/control

To address the first question, whether there might be a common core of self-regulation across ages and specific components of self-regulation, we correlated children's behavior across the three ages and self-regulatory tasks. We found no relations among 15-month behavioral and affective responses to frustration, 24-month resistance to temptation latency or strategies, and 36-month persistence and affective responses to difficult tasks.

On the one hand, perhaps this is not altogether surprising, given that we were looking for relations across different ages during a period of major developmental reorganization, as well as across quite different tasks, and using rather different indices of self-regulatory behavior. But even for those behaviors that we might reasonably have expected to relate over time on simply face-valid grounds, there was no consistency. For example, being persistent at the frustrating task at 15 months was unrelated to persistence on challenging tasks at 36 months. Using distraction as a strategy in the frustrating situation at 15 months was unrelated to using distraction as a strategy during resistance to temptation at 24 months. Help-seeking when frustrated at 15 months was unrelated to using a social strategy to help resist temptation at 24 months. Affect at 15 months during a frustrating task was unrelated to affect during a challenging task at 36 months.

These data suggest to us that there is little coherence in specific features of self-regulation during the toddler years. Interestingly, three previous studies, quite different from ours but at roughly the same ages came to similar conclusions. **[SLIDE 7: Vaughn, other studies]** In 1984, Vaughn, Kopp and colleagues found no correspondences at 18 and 24 months between toddlers' compliance during a clean-up task and the length of their delay in resistance and delay of gratification tasks; by 30 months some modest relations between the two aspects of self-regulation did begin to emerge. They did not address correspondences across ages, however. In 1990, Schneider-Rosen found that age-related trends between 18, 24, and 30 months were different for resistance to temptation, persistence, and compliance during clean-up; they further found no correlation within ages between how long children resisted temptation and their compliance during clean-up, similar to the Vaughn findings. They, too, did not look for correspondences across ages. Finally, in 1996, Grolnick and colleagues found no relations between the self-regulatory strategies used by 24-month-olds in delay of gratification settings and in maternal separation contexts. So now four quite different studies, using different indices of self-regulation and addressing issues of correspondence in different ways, have found that these different components of self-regulation appear to be rather independent during the toddler years.

In contrast, however, we find several interesting correspondences in maternal behavior over tasks and ages. **[SLIDE 8: Mothers' behavior over time, setting]**

<u>Mothers' behavior at 15 mos:</u>

Direct behavior (Frustration task) -----> High structure & Intrude physically (Tea Party)

Encourage independence (Frustration task) ----> Follow child's agenda (Tea Party)

At 15 mos:	24 mos:
Encourage independence (Frustration task) Supportive structure (Tea Party)	Gentle Guidance (Teaching)
Insist child engage task (Frustration task)	Negative evaluations, Intrusive control (Teaching)
High structure (Tea Party)	Directive, Controlling (Teaching)

For example:

-at 15 months mothers who were more directive when their child was frustrated, were also structuring and intrusive during interaction with a tea party set at the same age;

-mothers who more often encouraged their children to manage the frustrating task on their own at 15 months were also more likely to follow their children's lead during play with the teaparty set at 15 months;

-mothers who encouraged independent regulation in the frustrating task at 15 months and who, during the tea party, provided structure only as needed to keep the child engaged, were more likely to use gentle guidance and suggestion as a teaching strategy at 24 months;

-mothers who insisted their 15-month-olds stay engaged with the frustrating task were more often intrusive and more often negatively evaluated their child's efforts in the 24-month teaching task;

-mothers who were highly structuring during interaction with the tea party at 15 months also were more directive and controlling during the teaching task at 24 months.

So we do find some continuity in mothers' socializing strategies relevant to self-regulation across several interaction contexts and ages. And we have previously found predictive relations between these particular aspects of mothers' behavior and their children's self-regulation in particular settings, both within and across ages. Yet we find no continuity in the specific features of children's self-regulation across settings and ages. What does this mean, then, for our thinking about the early socialization of self-regulation?

Based on our conceptual model, we reasoned that if we focused on children's motive to self-regulate rather than on their specific skills and strategies of self-regulation, that we would be more likely to detect commonalities across settings and ages; correspondingly if we focused on the general features of parenting that cut across the particular demands of each self-regulatory situation, that we might find correspondences between the general motive to self-regulate and the general features of parenting.

Unfortunately, we had not set out to index the motive to self-regulate and so we did not have a set of measures that we could easily translate into this construct. However, we could composite our measures at each age to reflect better or poorer self-regulation as a function of the particular task demands. That is, rather than focusing on particular self-regulatory behaviors or strategies, we derived measures of the degree to which children did or did not regulate their behavior and affect

more generally in each particular self-regulation task. We then summed these to yield a general Self-Regulation score where children with higher values are more likely to self-regulate across multiple task situations. The three general Self-Regulation composites were **[SLIDE 9: SR composites]**:

Frustration task: (Distract + Avoid + On-Task) - Neg Aff

Resistance task: (Latency + Distract + Social) - Object focus

Persistence task: Persistence - (Avoidance + Neg affect)

We also generated 4 general parenting dimensions that cut across the interaction contexts in which we had observed the mothers, based on the empirical relationships we had found across those settings **[SLIDE 10 or 10A: Maternal composites]**:

Controlling/high structure (across settings): Amt of structure + Maternal agenda (Tea Party, 15 mos) + Directives (Frustration tasj, 15 mos) + Control (Teaching, 24 mos)

Negative/Intrusive: Intrude (Tea Party, 15 mos) + Redirect (Frustration task, 15 mos) + Neg Feedback (Teaching, 24 mos) + Neg/intrusive control (Teaching, 24 mos)

Supportive structure/Gentle Guidance: Supportive structure, geared to child's need (Tea Party, 15 mos) + Child Agenda (Tea Party, 15 mos) + Independence Foster (Frustration task, 15 mos) + Gentle Guidance (Teaching, 24 mos)

Warm/Positive: Warmth (Tea Party, 15 mos) + Pos Feedback (Teaching, 24 mos)

Now we can ask whether a child's general likelihood of self-regulating is similar across ages and contexts, and whether general features of parenting relate to the child's general propensity to self-regulate.

Once more, we found no relations across ages and settings in children's propensity to self-regulate. However, the overall self-regulation score did relate to some general features of parenting **[SLIDE 11: Correlations btw tot sr & parenting]**. Specifically, the affective dimensions of parenting were related to children's overall self-regulation, but the controlling, structuring, and guiding features of parenting were not.

Warm/Positive Parenting x Total SR:	r = .39
Negative/Intrusive Parenting x Total SR:	r = -.35
Controlling/high structure x Total SR:	r= .04
Supportive/Gentle Guidance x Total SR:	r= .19 (ns)

What do we conclude about our two primary questions posed at the outset based on these preliminary results? **[SLIDE 12: 2 Questions w/answers]** First, it is clearly difficult in the toddler

years to identify a common core or coherent set of features of self-regulation that cut across the various components of this construct over contexts and over ages. One possibility is that the emotions and behaviors elicited in different self-regulatory settings are very different and therefore require quite different specific regulatory strategies and skills. So, perhaps a different assessment or measurement strategy would yield a clear common denominator. For example, Kochanska (w/ Aksan, 1995) has found that toddlers who comply quickly and eagerly with their mother's requests to clean up are also less likely to play with a set of tempting toys that their mothers forbid them to touch. (i.e., it may be the common expectation for compliance across these two settings that accounts for the cross-situation coherence in this case.)

It is also possible, as Kopp and others have proposed, that as the child's self-system is developing rapidly during the toddler years, along with representational, communicative, and various other systems related to self-regulation, the subsystems of self-regulation develop relatively independently from one another. Nevertheless, the Blocks found stability almost 2 decades ago in what they called "Ego Control" between 3 and 7 years of age, suggesting that coherence in self-regulation does emerge once the child's developing subsystems become themselves more organized. How coherence in self-regulation emerges during the late toddler and early preschool period thus becomes an important research question.

A second question that emerges from these findings is whether there is a separate motive to self-regulate, that even in the early toddler years is independent from specific skills that the child uses to accomplish self-regulation in particular contexts. One important task, then, will be to operationalize the motive to self-regulate separately from the particular skills and strategies involved in the process of self-regulation.

Despite the lack of coherence on the child side, we do find some coherence in maternal behavior across specific interaction contexts that we know relate to toddlers' self-regulation. Interestingly, when we composite the stable maternal behaviors into conceptually distinct dimensions of parenting and relate them to a general index of children's propensity to self-regulate, it is the affective features of parenting that are predictive.

This is consistent with the distinctions we have made in our model of early socialization of self-regulation. That is, we have hypothesized that the general motive or willingness or tendency to self-regulate is tied to the affective dimensions of parenting, and socialized in the context of warm, responsive parenting---what Maccoby and other recent authors have called a "reciprocal" or "cooperative" relationship. At the same time, the particular skills, strategies, and features of self-regulation must be learned through specific parenting strategies and behavior, often in specific contexts.

Together, these data suggest to us that we need to continue to look for both general features of parenting that relate to early self-regulation, and specific features that relate to specific components of how children actually accomplish self-regulation, as well as both general and specific features of emerging self-regulation.

SLIDE 2

TWO QUESTIONS RE: EARLY SELF REGULATION

1. HOW GENERAL OR SPECIFIC IS EARLY SELF-REGULATION?

2. HOW GENERAL OR SPECIFIC IS SOCIALIZATION OF EARLY SELF-REGULATION?

Slide 3

What is self-regulation?

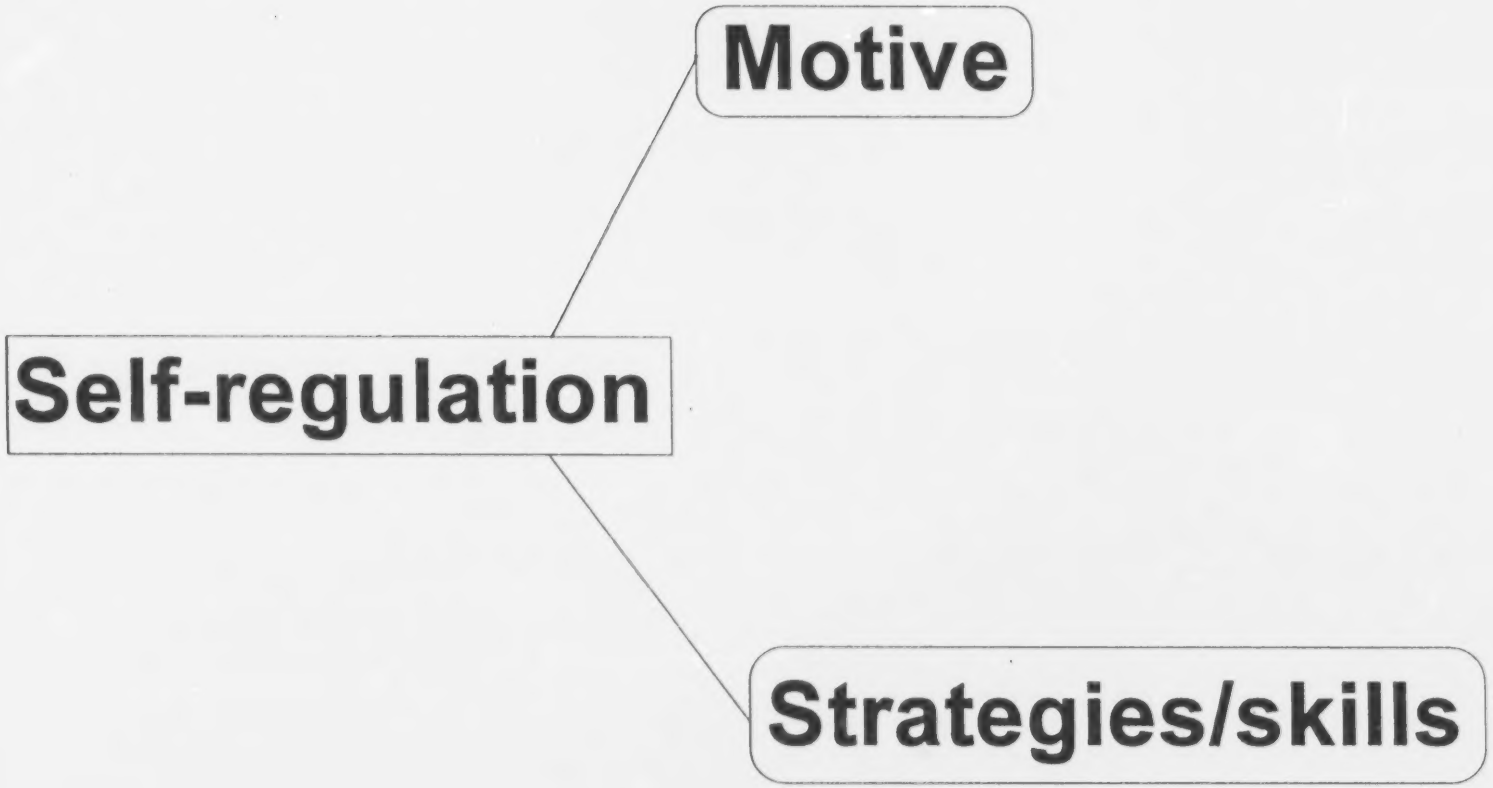
Kopp:

- comply
- start and stop activity according to setting
- modulate intensity, frequency, duration of action
- postpone action toward desired goal
- generate socially approved behavior in absence of external monitors

Maccoby:

- start and stop behavior according to setting
- postpone pursuit of a goal
- regulate intensity of action, affect, arousal

Slide 4



SLIDE 5

Parental Style ⇒ Motive to self-regulate

-warmth vs. hostility
-harsh power assertion vs. induction

Parental Structure ⇒ Self-regulation skills/ strategies

-scaffolding
-teaching, modelling

SLIDE 6

CHILD

15 mos: affect & regulation strategies, frustration task

24 mos: resistance to temptation (latency; strategies), attractive toy

36 mos: affect & persistence, challenging tasks

MOTHER

15 mos, frustration task: response to child's affect and behavioral attempts to regulate

15 mos, tea party: amount, quality of structure to maintain focused play

24 mos, teach difficult task: evaluative feedback, directiveness/control

SLIDE 7

Vaughn, Kopp, et al (1984)

-no relations within age between compliance & delay @ 18, 24 mos

-modest relations @ 30 mos

Schneider-Rosen & Wenz-Gross (1990)

-age trends (18-->24-->36 mos) differ for resistance to temptation vs. persistence vs. compliance

Grolnick, et al (1996)

-no relations between strategies during delay of gratification and arousal regulation strategies during maternal separation

SLIDE 8
MATERNAL BEHAVIOR

At 15 mos:

Direct behavior (Frustration)-->High structure,
Intrude (Tea party)

Encourage independence (Frustration)-->Follow child's agenda (Tea party)

At 15 mos ---------->	At 24 mos:
Encourage independence (Frustration) Supportive structure (Tea party)	Gentle guidance (Teaching)
Insist child stay engaged (Frustration)	Neg evaluation, Intrusive control (Teaching)
High structure (Tea party)	Directive, High control (Teaching)

SLIDE 9
SELF-REGULATION COMPOSITES

(summed to yield overall self-regulation)

1. Frustration task:
   (Distract + Avoid + On-task) - Negative affect

2. Resistance task:
   (Latency + Distract + Social) - Object Focus

3. Challenging tasks:
   Persistence - (Avoidance + Negative affect)

SLIDE 10

DIMENSIONS OF PARENTING

(sum of relevant behaviors across settings)

Controlling/High Structure

Negative/Intrusive

Supportive structure/Gentle Guidance

Warm/Positive

SLIDE 10A

DIMENSIONS OF PARENTING

(sum of relevant behaviors across settings)

Controlling/High Structure

Amt of structure + Mother's agenda (Tea party)
+ Directives (Frustration)
+ Control (Teaching)

Negative/Intrusive

Physically intrude (Tea party)
+ Insist child on task (Frustration)
+ Negative feedback + Negative/intrusive (Teach)

Supportive structure/Gentle Guidance

Supportive structure + Child agenda (Tea party)
+ Encourage independence (Frustration)
+ Gentle guidance (Teaching)

Warm/Positive

· Warmth (Tea party)
+ Positive feedback (Teaching)

SLIDE 11

RELATIONS BETWEEN OVERALL SELF-REGULATION & GENERAL DIMENSIONS OF PARENTING

Total Self-Regulation :

X Warm/Positive parenting	r = .39
X Negative/Intrusive parenting	r = -.35
X Hi control/Hi structure	r = .04
X Supportive/Gentle guidance	r = .19

SLIDE 12

QUESTIONS/CONCLUSIONS/RESEARCH DIRECTIONS

1. How general or specific is early self-regulation?

   - specific features of each component of self-regulation are relatively independent in the toddler years

   - how does coherence eventually develop, if it does?

   -is there a common denominator in the motive to self-regulate, apart from the skills and strategies needed to accomplish regulation?

2. How general or specific is socialization of early self-regulation?

   -specific maternal behaviors relevant to socializing self-regulation, and related to children's self-regulation in particular contexts, do exhibit some coherence across settings

   -affective dimensions of parenting, across settings, relate to a general index of children's propensity to self-regulate

   -consistent with hypothesis that general features of parental style relate to development of motive to self-

regulate, whereas specific parenting strategies relate to development of specific skills and strategies for self-regulation